



(19)

Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 0 950 968 A1

(12)

## EUROPEAN PATENT APPLICATION

published in accordance with Art. 158(3) EPC

(43) Date of publication:

20.10.1999 Bulletin 1999/42

(21) Application number: 98937807.0

(22) Date of filing: 13.08.1998

(51) Int. Cl.<sup>6</sup>: G06F 17/60

(86) International application number:

PCT/JP98/03608

(87) International publication number:

WO 99/09502 (25.02.1999 Gazette 1999/08)

(84) Designated Contracting States:

DE FR GB

(30) Priority: 13.08.1997 JP 23056497

(71) Applicant:

MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD  
Kadoma-shi, Osaka 571-0000 (JP)

(72) Inventor: TAKAYAMA, Hisashi

Tokyo 156-0043 (JP)

(74) Representative: Casalonga, Axel

BUREAU D.A. CASALONGA - JOSSE

Morassstrasse 8

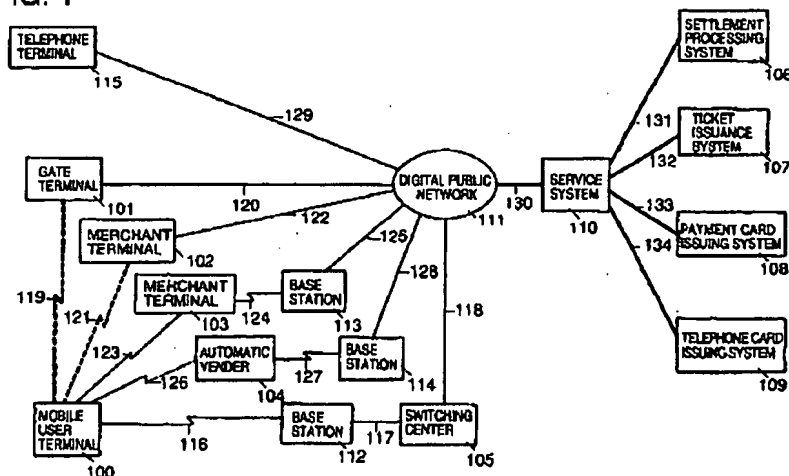
80469 München (DE)

## (54) MOBILE ELECTRONIC COMMERCE SYSTEM

(57) The objective of the present invention is to provide a mobile electronic commerce system that is superior in safety and usability. The mobile electronic commerce system comprises an electronic wallet 100, supply sides 101, 102, 103, 104 and 105, and a service providing means 110 that is connected by communication means. The service providing means installs a program for an electronic ticket, an electronic payment card, or an electronic telephone card. The electronic wallet employs the installed card to obtain a product or

a service or entrance permission. The settlement process is performed by the electronic wallet and the supply side via the communication means, and data obtained during the settlement process are managed by being transmitted to the service providing means at a specific time. A negotiable card can be easily obtained, and when the negotiable card is used the settlement process can be quickly and precisely performed.

FIG. 1



EP 0 950 968 A1

## Description

## FIELD OF THE INVENTION

[0001] The present invention relates to an electronic commerce system that provides a settlement function for retail sales transactions involving the use of payment cards or credit cards (bank cards), a settlement function that provides for the employment of telephone cards for paying communication fees incurred through the use of mobile telephones, an examination function for verifying tickets issued for admission to various events, including concerts and movies, and a sales and distribution function for these payment cards, telephone cards and tickets. In particular, the present invention pertains to the maintenance of the usability and the safety of settlements, and to the facilitation of efficient and smooth business transactions.

## BACKGROUND OF THE INVENTION

[0002] As the employment of telephone cards and payment cards, such as pinball game prepaid cards, has spread, prepaid systems for which magnetic cards are used to settle debts have become common. However, since there has been a corresponding increase in attendant problems, such as the illegal use of altered cards and excess charges imposed by retail shops, there is a demand that the safety of settlement systems be improved. Recently, an IC payment card has appeared that provides one countermeasure to illegal applications.

[0003] An explanation will now be given for the organization of a prepaid settlement system employing a conventional, general payment card.

[0004] In Fig. 138A is shown the organization of a prepaid settlement system using a conventional, common payment card.

[0005] In Fig. 138A, a payment card terminal 13801 is installed in a retail store 13806 and is used in the store for settlements for which payment cards are used. The payment card terminal 13801 is connected across a communication line 13804 to a central system 13802 operated by a payment card issuer 13807. At some stores, payment card terminals 13801 are connected via a POS system at the store and the communication line 13804 to the central system 13802 operated by a payment card issuer 13807.

[0006] To use a payment card to purchase a product at the retail store 13806, first, a consumer 13805 pays cash at the payment card store 13803, whereat payment cards are sold (13808), and purchases a payment card 1800 (13809). The sale of the payment card at this time is transmitted from the payment card store 13803 to the payment card issuer 13807 (13810).

[0007] Then, the consumer 13805 hands the payment card 13800 to a clerk at the retail store 13806 (13811) and requests that the payment card be used when

processing the settlement.

[0008] Thereafter, the clerk inserts the payment card 13800 into the card reader of the payment card terminal 13801 and initiates the payment card settlement processing. In consequence, the payment card terminal 13801 reads current balance information from the payment card 13800, subtracts the price of the product from the available balance, and writes new balance information to the payment card. The payment card terminal 13801 also uses a printer to output a statement of account in which the price and the new payment card balance are specified.

[0009] The clerk hands the consumer 13805 the product, the payment card and the statement of account (13813 and 13812), and thus terminates the settlement processing using the payment card.

[0010] Following this, the payment card 13801 transmits the amount of the payment that was subtracted from the balance on the payment card 13800 across the communication line 13804 to the central system 13802 of the payment card issuer 13807 (13814). In response, the payment card issuer 13807 performs a transaction to transfer money to the retail store 13806 (13815).

[0011] A payment card may be purchased from an automatic vending machine that is set up to sell payment cards. Further, the same basic arrangement is employed for a payment card terminal 1380 that is constituted by an automatic vending machine and a public telephone that has a settlement function for which a payment card is used.

[0012] In addition, as is disclosed in Japanese Examined Patent Publication No. Hei 6-103426, a system is proposed wherein a payment card and a card reader/writer authenticate each other by employing a digital signature as a safety countermeasure.

[0013] Now, consider the sale and use of tickets for various events, including concerts and movies, for which prepaid settlement processing is performed in addition to that performed by using a payment card. The tickets are sold on line, while when presented, they are visually examined by ushers.

[0014] In Fig. 138B is shown the arrangement of a conventional, common ticket vending system.

[0015] In Fig. 138B, for ticket sales a ticket vending terminal 13817 is installed in a ticket retail store 13820. The ticket vending terminal 13817 is connected via a communication line 13819 to a central system 13818 for a ticket issuer 13821.

[0016] To purchase a ticket for an event, a concert or a movie, first, the consumer 13805 calls the central system 13818 of the ticket issuer 13821 and makes a reservation for a desired ticket (13824). The center system 13818 reserves the ticket applied for, and issues a reservation number to the consumer 13805 (13825).

[0017] After the reservation number is received, at a ticket retail store 13820 the consumer 13805 gives a clerk the number and asks that a ticket be issued.

[0018] To issue the ticket, the clerk inputs the reserva-

tion number at the ticket vending terminal 13817. The ticket vending terminal 13817 transmits the reservation number to the central system 13818 of the ticket issuer 13821 (13827) via the communication line 13819. In response, the center system 13818 transmits the ticket information for the reserved ticket to the ticket vending terminal 13817 (13828).

[0019] Subsequently, the ticket vending terminal 13817 prints the received ticket information on a specific pasteboard blank designated by the ticket issuer 13821, and outputs the result as a ticket 13816. The clerk then delivers the ticket 13816 to the consumer 13805 (13830) in exchange for cash (13829) and the ticket vending process is terminated.

[0020] Then, following the subtraction of its commission, the ticket retail store 13820 transmits a record of the receipts for the sale of the ticket to the ticket issuer 13821, which, in turn, subtracts its commission from the record of receipts and transmits the result to the promoter of the event for which the ticket was sold (13834).

[0021] Later, the consumer 13805 presents the ticket 13816 to an usher 13822 at an event hall 13823 (13832), and after the usher 13822 visually examines the contents of the ticket and determines that all entries are correct, the consumer 13805 is permitted to enter.

[0022] Since according to the prepaid settlement system for which a conventional payment card is employed the settlement process is primarily performed by a retail store, it is possible for a retail store to cheat a consumer when performing the settlement process by charging a higher than authorized price for a product.

[0023] In addition, in the conventional settlement system it is possible for a retail store to so alter a payment card terminal that the price charged during a settlement process is higher than is that which is displayed on a cash register or is printed on the statement of account.

[0024] Furthermore, since basically, in a conventional settlement system, the balance information held by a payment card is rewritten by the payment card terminal, the retail store may modify the payment card terminal so that the central system is charged a higher price than that which is actually subtracted from the balance recorded on the payment card.

[0025] Also, since in a conventional settlement system a payment card is loaded directly into a payment card terminal installed in a store, the retail store could modify the payment card terminal so that it alters the information stored on the card, or so that it illegally reads personal information other than that required for a settlement.

[0026] In order to prevent such an illegal modification of a payment card terminal, a physical countermeasure is required, such as the sealing of the terminal to prevent its disassembly, and this has constituted a barrier to a reduction in the size of a payment card terminal and to a reduction in the manufacturing costs.

[0027] Moreover, for a conventional settlement system, the capacity of the memory provided on a payment

card is limited, and a consumer can not directly confirm an amount that has been subtracted from the payment card. Therefore, when a settlement is processed, a retail shop must deliver to a consumer a statement on which the price of a product and the remaining payment card balance is specified. This requirement constitutes a barrier to sales efficiency and to resource conservation.

[0028] According to a conventional ticket vending system, when buying a ticket a consumer must visit a ticket retail store, and this is inconvenient.

[0029] Also, as established by a conventional ticket vending system, the validation of a ticket is effected by examining the ticket visually, and such a process is not only inaccurate and inadequate but can be a contributing factor to the commission of an illegal act, such as the use of a counterfeit ticket.

[0030] Furthermore, according to the conventional ticket vending system, when a concert, for example, is canceled after a ticket is issued, to receive a refund the consumer must return to the ticket retail store, an additional inconvenient requirement.

[0031] And then, in accordance with a conventional settlement system and a conventional ticket vending system, when a consumer wishes to transfer to a friend, etc., a payment card or a ticket that has been purchased, the article must be physically delivered or mailed to the intended recipient, which constitutes one more inconvenience.

#### DISCLOSURE OF THE INVENTION

[0032] To resolve the above shortcomings of the conventional settlement system, it is one objective of the present invention to provide a mobile electronic commerce system that provides superior safety and usability.

[0033] According to the present invention, in a mobile electronic commerce system for paying, via wireless communication means, a required amount using an electronic wallet that includes wireless communication means, and for receiving, from a supply side, a product or a service, or a required permission, service means is provided for connecting the electronic wallet and the supply side via the communication means. The service means installs in the electronic wallet, via the communication means, a program for an electronic negotiable card. The electronic wallet employs the installed electronic negotiable card to obtain a product or a service, or a required permission, from the supply side. The settlement process using the negotiable card is performed by the electronic wallet and the supply side via the communication means. The data that are stored in the electronic wallet and at the supply side, in association with the settlement process, are transmitted to the service means at a predetermined time, and are managed by the service means.

[0034] In addition, the electronic wallet stores a pro-

FIG. 34

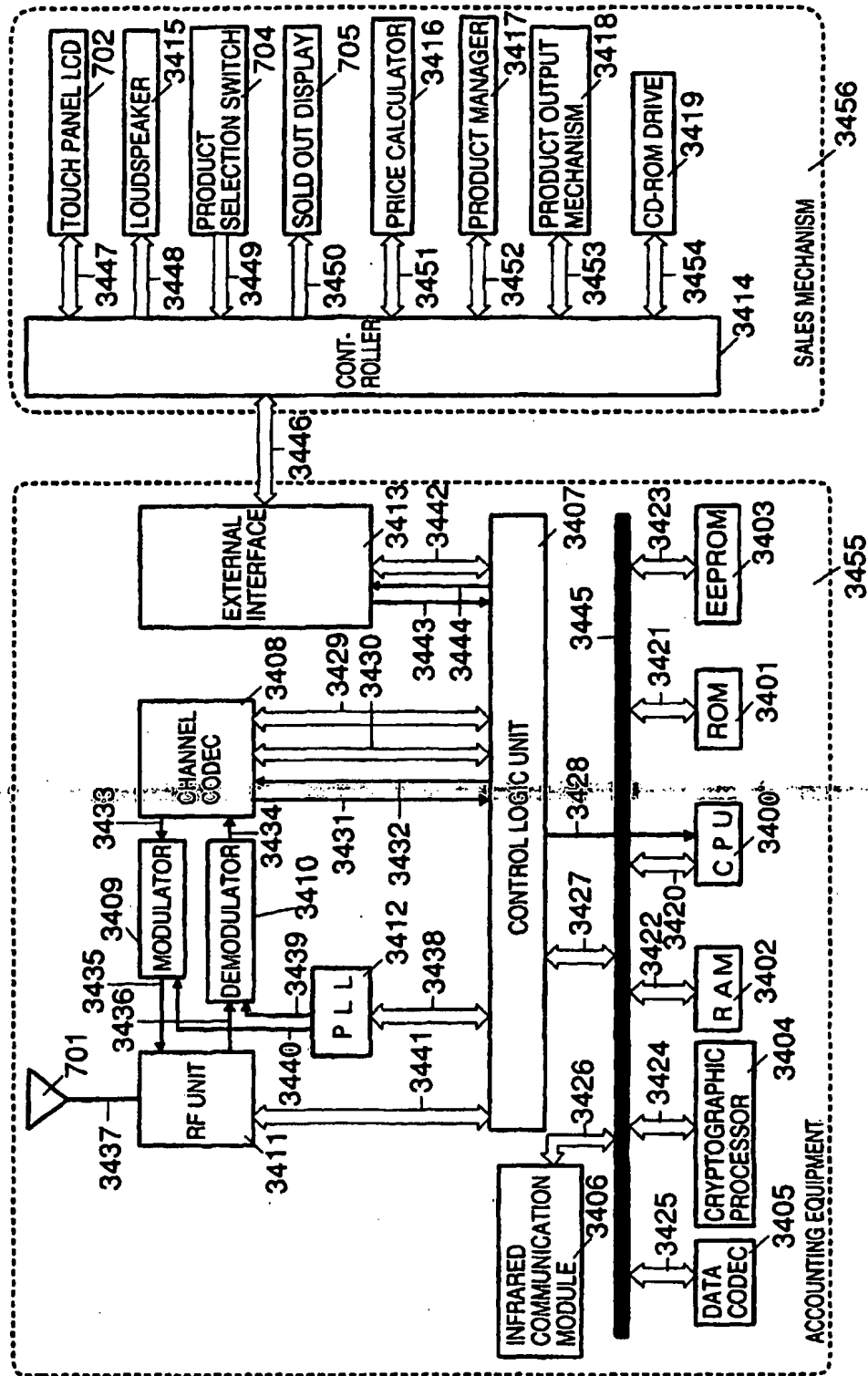


FIG. 41A

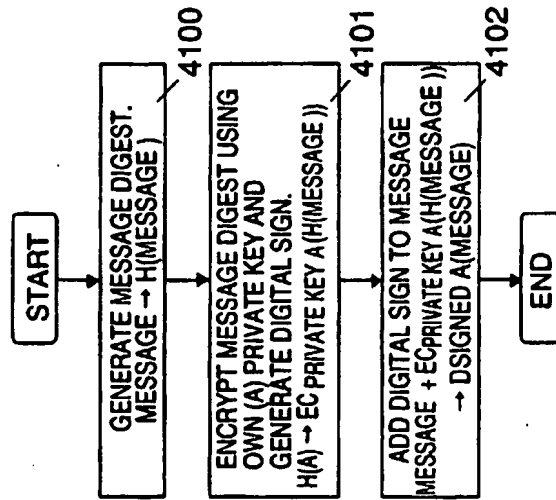


FIG. 41B

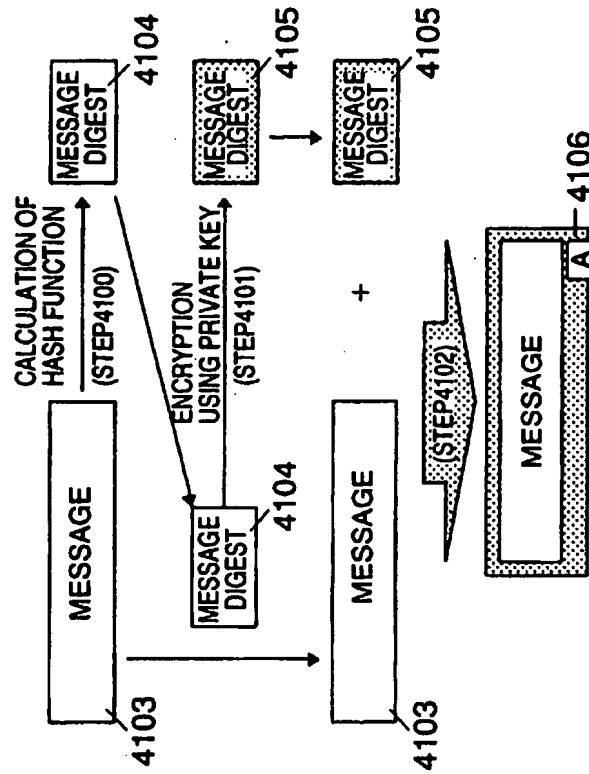
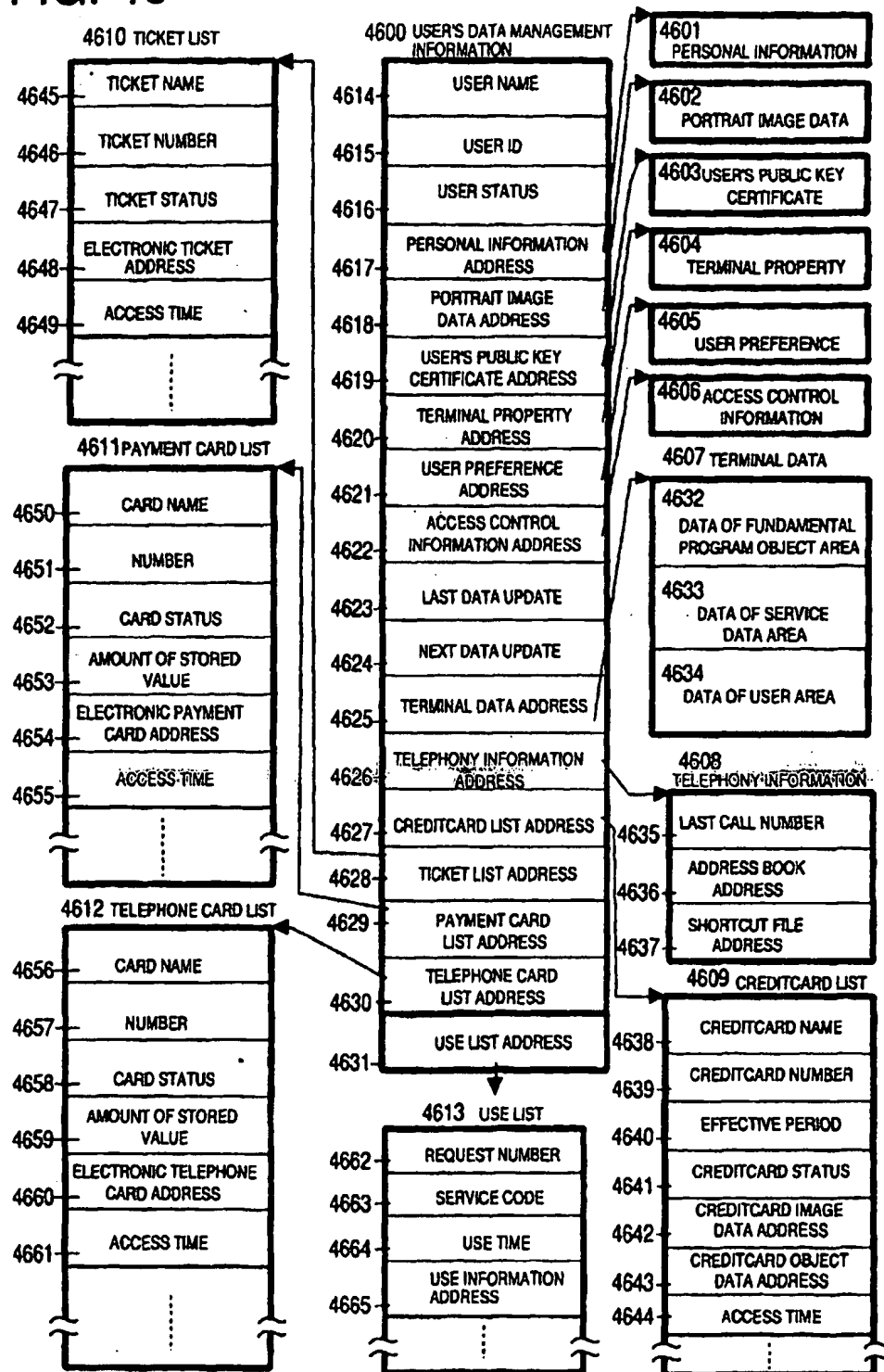


FIG. 46



This Page is inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record

## BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

☒ BLACK BORDERS

☒ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES

☐ FADED TEXT OR DRAWING

☒ BLURED OR ILLEGIBLE TEXT OR DRAWING

☒ SKEWED/SLANTED IMAGES

☐ COLORED OR BLACK AND WHITE PHOTOGRAPHS

☐ GRAY SCALE DOCUMENTS

☐ LINES OR MARKS ON ORIGINAL DOCUMENT

☐ REPERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY

☒ OTHER: \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images  
problems checked, please do not report the  
problems to the IFW Image Problem Mailbox**